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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/675,635
Filing Date: September 30, 2003
Appellant(s): CHOI ET AL.

Paul Farrell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/15/2010 appealing from the Office action mailed 6/7/2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

Claims 1-8

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the

subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

GB 2,367,530	Bick	10-2002
6,518,958	Miyajima et al.	2-2003

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bick (UK Application # GB 2,367,530)** in view of **Miyajima et al. (USPN 6,518,958)**.

Consider **claim 1**, Bick discloses a keypad assembly for mobile handset (read as portable radiotelephone) comprising (see figure 3):

A flexible substrate (31) (read as printed circuit board) having a plurality of metal domes (32);

A silicone rubber (17) (read as keypad rubber) placed on the flexible substrate (31) (read as printed circuit board) have raised surface with numerals aligned with the positions corresponding to the metal domes (32) (see figure 3, element 18; figure 4; pg. 4, lines 9 - 10);

A sensing means (19) disposed on the silicone rubber (17) (read as keypad rubber; see figure 3); and

A keymat (17) (read as key button part) disposed on the sensing means, whereby a touch screen function is selectively activated from the keypad interface (see figure 2) when user slides their finger over surface of the keymat (17) (read as key button part), the key button part integrating a keypad and touch screen panel and whereby, keypad (7) can **independently** (read as "...one of a...";see pg. 4, lines 18 - 19) operate as a conventional keypad (read as key button function) and a touch pointing device (read as touch screen function) according to an inherent operation of selecting an input mode (read as a touch screen function since Bick uses the sensing means or a key button function electrically contacting the metal domes exclusively according to a predetermined input mode of the radiotelephone; see pg. 4, line 30 - pg. 5, line 5).

Bick further discloses keypad 7 (read as key button part) functioning in one of a keypad mode and a touch screen panel mode (see pg. 4, lines 18-19) and a plurality of keys (read as an input mode shift key) arranged to actuate a respective switch (read as shifting) from one of the keypad mode and the touch screen panel mode to the other mode (see pg. 1, lines 22-25; pg. 2, lines 19-21). Bick also discloses a key button part having a plurality of key buttons being integrally formed with each other and being position with spacing in between for functioning (see fig. 1; where the buttons are integrally formed but with spacing).

However, Bick does not explicitly disclose a power supply unit supplying power to the keypad and cutting off power to the touch screen panel in the keypad mode and an input mode shift key shifting from one of the keypad mode and the touch screen panel mode to the other mode and a plurality of key buttons being positioned with no spacing.

Nevertheless, Bick discloses a plurality of keys to actuate the shifting of user input mode, i.e., the keypad mode and touch screen mode, and shifting from one mode to the other mode.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to slightly modify the teachings of Bick in order to have a dedicated key for input mode shifting and conserve power by cutting off the power supply to one of the input modes.

However, Bick does not disclose a plurality of key buttons being positioned with no spacing between the top planar surfaces of adjacent keys among the plurality of key

buttons such that top planar surfaces of the plurality of key buttons form a single, substantially planar touch screen panel.

In the related field of endeavor, Miyajima discloses a plurality of key buttons being positioned with no spacing (see abstract; figs. 1-2,6-8; where keys are close together and without spacing where the finger is slid over the same area as the key button part).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Bick with the teachings of Miyajima in order to make the key button part of a mobile phone more compact and thus reduce the overall size of the phone.

Consider **claim 2** as applied to claim 1, Bick discloses sensing means is a capacitive sensor (see pg. 3, lines 26 - 28).

Consider **claim 3** as applied to claim 1, Bick discloses keymat (17) (read as key button part) is attached to optical adhesive layer (27) (read as film sheet) which is attached to the upper surface of the sensing means (19), the optical adhesive layer (27) (read as film sheet) by way of keymat (17) that has numbers printed on it (see figure 3; figure 4; pgs. 4 - 5, lines 31 - 33 and 1 - 3).

Consider **claim 7**, Bick discloses a method of inputting data to a portable radiotelephone in one of a keypad input mode and a touch input screen panel mode, the portable radiotelephone having a keypad (7) as a conventional keypad or as a touch sensitive pointing device (read as physically integrating a touch screen panel see pg. 4, lines 18 - 19), comprising the steps of:

Determining whether or not user slides their finger over the surface (read as input mode shift key) of the keymat (17), since the keypad (7) is operable to function **independently** as a touch sensitive pointing device or a conventional keypad it would inherently have a step to determine which mode is actuated (see pg. 4, lines 18 - 19; pg. 5, lines 4 - 5);

The above stated sliding action (read as input mode shift key) shifts the mobile device from keypad input mode to touch screen mode, where, the **independent** (see pg. 4, lines 18 - 19) functionality feature of the keypad (7) would inherently yield such a step and in addition yield an input mode shift key (see pg. 5, lines 3 - 16; pg. 4, lines 18 - 19); and

The keypad (7) can operate in the keypad mode either **independently** or simultaneously as a touch sensitive pointing device, therefore, it would be obvious to cut off a driving power supplied to the conventional keypad, and supplying the driving power to the touch screen panel while the keypad (7) is in touch sensitive mode and operating **independently** (see pg. 4, lines 18 - 19).

Bick further discloses keypad 7 (read as key button part) functioning in one of a keypad mode and a touch screen panel mode (see pg. 4, lines 18-19) and a plurality of keys (read as an input mode shift key) arranged to actuate a respective switch (read as shifting) from one of the keypad mode and the touch screen panel mode to the other mode (see pg. 1, lines 22-25; pg. 2, lines 19-21). Bick also discloses a key button part having a plurality of key buttons being integrally formed with each other and being

position with spacing in between for functioning (see fig. 1; where the buttons are integrally formed but with spacing).

However, Bick does not explicitly disclose a power supply unit supplying power to the keypad and cutting off power to the touch screen panel in the keypad mode and an input mode shift key shifting from one of the keypad mode and the touch screen panel mode to the other mode and a plurality of key buttons being positioned with no spacing.

Nevertheless, Bick discloses a plurality of keys to actuate the shifting of user input mode, i.e., the keypad mode and touch screen mode, and shifting from one mode to the other mode.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to slightly modify the teachings of Bick in order to have a dedicated key for input mode shifting and conserve power by cutting off the power supply to one of the input modes.

However, Bick does not disclose a plurality of key buttons being positioned with no spacing between the top planar surfaces of adjacent keys among the plurality of key buttons such that top planar surfaces of the plurality of key buttons form a single, substantially planar touch screen panel.

In the related field of endeavor, Miyajima discloses a plurality of key buttons being positioned with no spacing (see abstract; figs. 1-2,6-8; where keys are close together and without spacing where the finger is slid over the same area as the key button part).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Bick with the teachings of Miyajima in order to make the key button part of a mobile phone more compact and thus reduce the overall size of the phone.

Consider **claim 4**, Bick discloses mobile communication device comprising: an input unit integrating a keypad and a touch panel functioning in one of a keypad mode and touch screen panel mode (see figs. 1-6 and associated text);

A controller (15) (read as control unit) for generating control signal to operate the input unit exclusively as one of the touch panel and the keypad according to an input mode predetermined by a user (see figs. 1-6 and associated text).

Bick further discloses a keypad (7) (read as input unit) which operates as a conventional keypad and **independently** (read as exclusively) as a touch sensitive pointing device (read as touch screen panel and physically integrates touch screen panel) (see pg. 4, lines 18 - 19, figs. 1 - 6).

Bick also discloses keypad 7 (read as integrating input unit) functioning in one of a keypad mode and a touch screen panel mode (see pg. 4, lines 18-19) and a plurality of keys (read as an input mode shift key) arranged to actuate a respective switch (read as shifting) from one of the keypad mode and the touch screen panel mode to the other mode (see pg. 1, lines 22-25; pg. 2, lines 19-21). Bick also discloses a key button part having a plurality of key buttons being integrally formed with each other and being position with spacing in between for functioning (see fig. 1; where the buttons are integrally formed but with spacing).

However, Bick does not explicitly disclose a power supply unit supplying power to the keypad and cutting off power to the touch screen panel in the keypad mode and an input mode shift key shifting from one of the keypad mode and the touch screen panel mode to the other mode and a plurality of key buttons being positioned with no spacing.

Nevertheless, Bick discloses a plurality of keys to actuate the shifting of user input mode, i.e., the keypad mode and touch screen mode, and shifting from one mode to the other mode.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to slightly modify the teachings of Bick in order to have a dedicated key for input mode shifting and conserve power by cutting off the power supply to one of the input modes.

However, Bick does not disclose a plurality of key buttons being positioned with no spacing between the top planar surfaces of adjacent keys among the plurality of key buttons such that top planar surfaces of the plurality of key buttons form a single, substantially planar touch screen panel.

In the related field of endeavor, Miyajima discloses a plurality of key buttons being positioned with no spacing (see abstract; figs. 1-2,6-8; where keys are close together and without spacing where the finger is slid over the same area as the key button part).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Bick with the teachings of

Miyajima in order to make the key button part of a mobile phone more compact and thus reduce the overall size of the phone.

Consider **claim 5** as applied to claim 4, Bick discloses a character recognition unit for converting a coordinate value into a character code when the input unit functions as the touch screen panel, the coordinate value being produced from the input unit by a user's contacting an upper surface of the touch screen panel.

Consider **claim 6** as applied to claim 5, Bick discloses a display unit for displaying a character corresponding to the character code from the character recognition unit (see pg. 5, lines 4 - 5 and figs. 1-6 and associated text)..

Consider **claim 8** as applied to claim 7, Bick discloses determining whether or not the input mode shift key is inputted; shifting the input mode from the touch screen input mode to the keypad input mode when the input mode shift key is inputted; and cutting off the driving power supplied to the touch screen panel, and supplying the driving power to the keypad (see pg. 5, lines 4 - 5 and figs. 1-6 and associated text).

(10) Response to Argument

Appellant primarily argues that Miyajima fails to disclose "...a single, substantially planar touch screen panel with no spacing in between the top planar surfaces of adjacent keys among the plurality of key buttons".

In particular, appellant argues that the Examiner cites the Abstract and Figs. 1,2, and 6-8 of Miyajima, specifically identifying "where keys are close together and without spacing where the finger is slid over the same area as the key button part." The

Abstract of Miyajima is summarized on page 8, and as can be easily seen, there is nothing in the Abstract that teaches "a plurality of key buttons being integrally formed with each other and being positioned such that top planar surfaces of the plurality of key buttons form a single, substantially planar touch screen panel with no spacing in between the top planar surfaces of adjacent keys among the plurality of key buttons."

Examiner respectfully disagrees.

The abstract of Miyajima clearly, in addition to other parts, disclose an electronic apparatus having a membrane switch and a touch panel switch at its entirety section and that the touch panel switch is elastic and is **laid over the membrane switch**. Therefore, the top most layer is a **single** elastic material over the entire keypad section (see col. 5, lines 12-21).

Appellant further argues that as shown above, FIG. 2 is a side perspective of the phone illustrated in FIG. 1. Additionally, FIG. 2 clearly shows that the top planar surfaces of the plurality of key buttons (37D, 37G, 37J, and 37M) are spaced far apart, and therefore do not form a single, substantially planar touch screen panel with no spacing in between the top planar surfaces of adjacent keys among the plurality of key buttons, as recited in independent Claim 1.

Examiner respectfully disagrees.

While it is clear that the markings 37D, 37G, 37J, and 37M of fig. 2 are raised and spaced apart, but they are only **markings** and not actual separate "key buttons" as asserted by the appellant. A closer examination of fig. 2 reveals that the "key buttons" are the elements labeled 38, 38A, and 38B, which are **underneath** the touch panel

switch 37 (also see col. 5, lines 12-21). Therefore, while the markings are separate and far apart, the top planar surface of the entry section 36 is a **single planar surface**, which is the touch panel switch 37 **and in addition is the top planar surface of the key buttons**. Regardless of whether the markings are separate or the surface is raised, the top most surface is a single material, a conductive film, to perform detection of finger sliding operation. The keys are raised to perform depression of "key buttons" underneath the layer represented by element 37. A further evidence of such an interpretation is the use of labeling used by fig. 2 of Miyajima. The top most layer is represented by "37" and the same "37" is used to identify and define the markings (37D, 37G, etc.). Therefore, one of ordinary skill in the art would conclude that 37 and 37D, 37G, 37J, 37M, for all intents and purposes, is the same surface and element.

Appellant further argues that the appellants respectfully disagree with Examiner's assertion that that"37A-37N are markings for the key button input and are simply raised, but otherwise, the top surface is substantially planar and is a single surface with no spacing between keys." As is clearly shown above in FIG. 2, the top planar surfaces of the plurality of key buttons are spaced far apart, and therefore do not form a single, substantially planar touch screen panel with no spacing in between the top planar surfaces of adjacent keys among the plurality of key buttons, as recited in independent Claim 1. Additionally, FIG. 2 illustrates the plurality of key buttons (37D, 37G, 37J, and 37M) having side regions that are perpendicular to the touch panel switch 37. This further contradicts the Examiner's assertion that Miyajima teaches top planar surfaces of the plurality of key buttons form a single, substantially planar touch screen panel with

no spacing in between the top planar surfaces of adjacent keys among the plurality of key buttons.

Examiner respectfully disagrees.

As explained above, the "key buttons" are clearly underneath the touch panel switch 37 and **the top planar surface of the touch panel and the key button is a single planar surface**. In addition, appellant's **own fig. 2** show raised key buttons with side regions perpendicular to the touch panel. Therefore, further, an indication that the top planar surface is the same material, whether the surface is raised markings or not.

Appellant argues that further, as Miyajima clearly teaches that the touch panel switch 37 is laid over the top surface of the entry section 36 and membrane switch with tactile feedback is laid beneath the touch panel switch 37, it is unreasonable for the Examiner to now assert that the keys are actually underneath the touch panel membrane. Clearly, in Miyajima, the "keys" are formed by the touch panel laid over the top surface of the entry section 36. Accordingly, the top planar surfaces of the plurality of key buttons are those identified by 37A-37N, which include 37D, 37G, 37J, and 37M of FIG. 2, and do not form a single, substantially planar touch screen panel with no spacing in between the top planar surfaces of adjacent keys among the plurality of key buttons. Additionally, even if Appellants are to use the Examiner's new interpretation of the keys being below the touch panel membrane, FIG. 2 clearly illustrates that these keys are spaced apart from each other (see 38A and 38B). Accordingly, this still does not teach the plurality of key buttons form a single, substantially planar touch screen panel with no spacing in between the top planar surfaces of adjacent keys among the

plurality of key buttons, for functioning in one of a keypad mode and a touch screen panel mode, as recited in independent Claim 1.

Examiner respectfully disagrees.

While the "keys" are underneath the touch panel, the top most surface of the entry section 36 is the same surface for both the touch panel and the key button input. It is the same single material, there are **no physical gaps** on the top most layer, therefore, no spacing between the top planar surfaces of adjacent "keys".

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/F. A./

Examiner, Art Unit 2618

Conferees:

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618

/DUC NGUYEN/

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